

SEQUENCE LISTING

<110> E.I. du Pont de Nemours and Company

<120> Aspartate Kinase

<130> BB1430 PCT

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<150> 60/172944

<151> 1999-12-21

<160> 24

<170> Microsoft Office 97

<210> 1

<211> 565

<212> DNA

<213> Zea mays

<220>

<221> unsure

<222> (127)

<400> 1

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cagccaatga ctgcaaaact gtgtttctgt tttagaactg tttgcagaca ccagtgaagt 480
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<210> 2

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<212> PRT

<213> Zea mays

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<221> UNSURE

<222> (42)

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Gln Arg Ala Ile Ile Ser Leu Ile Gly Asn Val Glu Gln Ser Ser Leu
      20              25              30

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Ile Leu Glu Lys Thr Gly Arg Val Leu Xaa Glu Ser Gly Val Asn Val
  35              40              45

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Gln Met Ile Ser Gln Gly Ala Ser Lys Val Asn Met Ser Leu Ile Val
50 55 60

His Asp Ser Asp Ala Lys Ala Leu Val Glu Ala Leu His Gln Ala Phe
65 70 75 80

Phe Glu Asp Asp Val Leu Ser Gln Val Glu Ala Glu Asn Leu Leu Val
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Gly

<210> 3
<211> 513
<212> DNA
<213> Zea mays

<220>
<221> unsure
<222> (474)

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acccgaaccg ggcctcgcgg tgcaagaggg ttgtcaatgg tggcgcgcga ctccaccagc 180
cgtcggggcca agcaagcggg cggcggggac ggcgtccttg gggcgccgtg tctcggaggg 240
ctcgggatgg agggattggg ggatcagctc agcgtggtga tgaagtccgg ggggtcctcg 300
gtgtcgtcgg ccgcgaggat ggctgagggt gccggcctca tcctgacgtt ccccgaggag 360
cgccccgtcg tcgttctctc tgccatgggg aaaaccacca acaaccttct ccttgctggg 420
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<212> PRT
<213> Zea mays

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20 25 30

Val Arg Gly Leu Ala Cys Phe Gly Thr Arg Thr Gly Pro Arg Gly Ala
35 40 45

Arg Gly Leu Ser Met Val Val Ala Asp Ser Thr Ser Arg Arg Ala Lys
50 55 60

Gln Ala Asp Gly Gly Asp Gly Val Leu Gly Ala Pro Val Leu Gly Gly
65 70 75 80

Leu Gly Met Glu Gly Leu Gly Asp Gln Leu Ser Val Val Met Lys Phe
85 90 95

Gly Gly Ser Ser Val Ser Ser Ala Ala Arg Met Ala Glu Val Ala Gly
100 105 110

Leu Ile Leu Thr Phe Pro Glu Glu Arg Pro Val Val Val Leu Ser Ala
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Met Gly Lys Thr Thr Asn Asn Leu Leu Leu Ala Gly Arg Lys Gly Asn
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Lys Val Trp Ser Tyr His Val Phe
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 <212> DNA
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<220>
 <221> unsure
 <222> (532)

<220>
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 <222> (1180)

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 ttctgtttta gaactgtttg cagacaccag tgagctgcga gcaccgattg tcaacaagat 1920
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09850813.030201

<210> 6
 <211> 560
 <212> PRT
 <213> Zea mays

<220>
 <221> UNSURE
 <222> (168)

<220>
 <221> UNSURE
 <222> (384)

<400> 6

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Gly	Thr	Arg	Thr	Gly	Pro	Arg	Gly	Ala	Arg	Gly	Leu	Ser	Met	Val	Val	35	40	45	
Ala	Asp	Ser	Thr	Ser	Arg	Arg	Ala	Lys	Gln	Ala	Asp	Gly	Gly	Asp	Gly	50	55	60	
Val	Leu	Gly	Ala	Pro	Val	Leu	Gly	Gly	Leu	Gly	Met	Glu	Gly	Leu	Gly	65	70	75	80
Asp	Gln	Leu	Ser	Val	Val	Met	Lys	Phe	Gly	Gly	Ser	Ser	Val	Ser	Ser	85	90	95	
Ala	Ala	Arg	Met	Ala	Glu	Val	Ala	Gly	Leu	Ile	Leu	Thr	Phe	Pro	Glu	100	105	110	
Glu	Arg	Pro	Val	Val	Val	Leu	Ser	Ala	Met	Gly	Lys	Thr	Thr	Asn	Asn	115	120	125	
Leu	Leu	Leu	Ala	Gly	Glu	Lys	Ala	Val	Gly	Cys	Gly	Val	Ile	His	Val	130	135	140	
Ser	Glu	Ile	Glu	Glu	Trp	Asn	Met	Val	Lys	Ser	Leu	His	Ile	Lys	Thr	145	150	155	160
Val	Asp	Glu	Leu	Gly	Leu	Pro	Xaa	Ile	Cys	Asn	Thr	Ser	Leu	Tyr	Glu	165	170	175	
Leu	Glu	Gln	Leu	Leu	Lys	Gly	Ile	Ala	Met	Met	Lys	Glu	Leu	Thr	Pro	180	185	190	
Arg	Thr	Ser	Asp	Tyr	Leu	Val	Ser	Phe	Gly	Glu	Cys	Met	Ser	Thr	Arg	195	200	205	
Ile	Phe	Ser	Ala	Tyr	Leu	Asn	Lys	Ile	Arg	Val	Lys	Ala	Arg	Gln	Tyr	210	215	220	
Asp	Ala	Phe	Asp	Ile	Gly	Phe	Ile	Thr	Thr	Asp	Glu	Phe	Gly	Asn	Ala	225	230	235	240

Asp Ile Leu Glu Ala Thr Tyr Pro Ala Val Ala Lys Arg Leu His Gly
 245 250 255
 Asp Trp Ile Gln Asp Pro Ala Ile Pro Val Val Thr Gly Phe Leu Gly
 260 265 270
 Lys Gly Trp Lys Ser Gly Ala Val Thr Thr Leu Gly Arg Gly Gly Ser
 275 280 285
 Asp Leu Thr Ala Thr Thr Ile Gly Lys Ala Leu Gly Leu Arg Glu Ile
 290 295 300
 Gln Val Trp Lys Asp Val Asp Gly Val Leu Thr Cys Asp Pro Asn Ile
 305 310 315 320
 Tyr Pro His Ala Lys Thr Val Pro Tyr Leu Thr Phe Glu Glu Ala Thr
 325 330 335
 Glu Leu Ala Tyr Phe Gly Ala Gln Val Leu His Pro Gln Ser Met Arg
 340 345 350
 Pro Ala Arg Glu Gly Asp Ile Pro Val Arg Val Lys Asn Ser Tyr Asn
 355 360 365
 Pro Lys Ala Pro Gly Thr Leu Ile Thr Arg Gln Arg Asp Met Asp Xaa
 370 375 380
 Gly Leu Val Val Leu Thr Ser Ile Val Leu Lys Ser Asn Val Thr Met
 385 390 395 400
 Leu Asp Ile Val Ser Thr Arg Met Leu Gly Gln Tyr Gly Phe Leu Ala
 405 410 415
 Arg Val Ser Gly Ile Cys Tyr Ile Glu Asp Leu Cys Ile Ser Val Asp
 420 425 430
 Cys Val Ala Thr Ser Glu Val Ser Val Ser Val Ser Leu Asp Pro Ser
 435 440 445
 Lys Ile Trp Ser Arg Glu Leu Ile Gln Gln Ala Ser Glu Leu Asp His
 450 455 460
 Val Val Glu Glu Leu Glu Lys Ile Ala Ile Val Arg Leu Leu Gln Gln
 465 470 475 480
 Arg Ala Ile Ile Ser Leu Ile Gly Asn Val Glu Gln Ser Ser Leu Ile
 485 490 495
 Leu Glu Lys Thr Gly Arg Val Leu Arg Lys Ser Gly Val Asn Val Gln
 500 505 510
 Met Ile Ser Gln Gly Ala Ser Lys Val Asn Met Ser Leu Ile Val His
 515 520 525
 Asp Ser Asp Ala Lys Ala Leu Val Glu Ala Leu His Gln Ala Phe Phe
 530 535 540
 Glu Asp Asp Val Leu Ser Gln Val Glu Ala Glu Asn Leu Leu Val Gly
 545 550 555 560

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<210> 7
 <211> 1953
 <212> DNA
 <213> Zea mays

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 cgaaccgggc ctgcggtgac aagaggggtg tcaatgggtg tcgccgactc caccagccgt 180
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 tcaaatgtca ctatgttggg cattgtgagc actcggatgc ttggtcagta tgggttttctg 1260
 gcaagggtat ttgctatatt tgaagatcta tgtatatctg tggattgtgt tgctaccagt 1320
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 aaggttaaca tgctcgtgat agtccatgat agcgatgcaa aggcactcgt agaagccctt 1620
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 accagtgagc tgcgagcacc gattgtcaac aagatggcaa gcctgtgata taattccaac 1920
 tgtctctaata caatatatat aataaacatt atc 1953

<210> 8
 <211> 555
 <212> PRT
 <213> Zea mays

<400> 8
 Met Ala Ile Pro Val Arg Ser Ala Ala Ala Pro Arg Arg Leu Val Pro
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 Ser Ile Pro Pro Ala Ser Ser Gly His Val Arg Gly Leu Ala Cys Phe
 20 25 30
 Gly Thr Arg Thr Gly Pro Arg Gly Ala Arg Gly Leu Ser Met Val Val
 35 40 45
 Ala Asp Ser Thr Ser Arg Arg Ala Lys Gln Ala Asp Gly Gly Asp Gly
 50 55 60

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Lys Val Val Leu Thr Ser Ile Val Leu Lys Ser Asn Val Thr Met Leu
 385 390 395 400
 Asp Ile Val Ser Thr Arg Met Leu Gly Gln Tyr Gly Phe Leu Ala Arg
 405 410 415
 Val Phe Ala Ile Phe Glu Asp Leu Cys Ile Ser Val Asp Cys Val Ala
 420 425 430
 Thr Ser Glu Val Ser Val Ser Val Ser Leu Asp Pro Ser Lys Ile Trp
 435 440 445
 Ser Arg Glu Leu Ile Gln Gln Glu Leu Asp His Val Val Glu Glu Leu
 450 455 460
 Glu Lys Ile Ala Ile Val Arg Leu Leu Gln Gln Arg Ala Ile Ile Ser
 465 470 475 480
 Leu Ile Gly Asn Val Glu Gln Ser Ser Leu Ile Leu Glu Lys Thr Gly
 485 490 495
 Arg Val Leu Arg Lys Ser Gly Val Asn Val Gln Met Ile Ser Gln Gly
 500 505 510
 Ala Ser Lys Val Asn Met Ser Leu Ile Val His Asp Ser Asp Ala Lys
 515 520 525
 Ala Leu Val Glu Ala Leu His Gln Ala Phe Phe Glu Asp Asp Val Leu
 530 535 540
 Ser Gln Val Glu Ala Glu Asn Leu Leu Val Gly
 545 550 555

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 <212> DNA
 <213> Oryza sativa

<220>
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 aatccaatca ccctgtaacc tctttgcaac agcaggatat gtcgcttcaa gaatgtccgc 180
 atttgtgaaa tcatcagtag ttataaagcc aatatcaa at gcatcatact gccgagcctt 240
 ttcccaagt ttattcaa atgcaagcaa atattcttgt agacatgcat tcaccgaagg 300
 aaacaaggta atcccgtgtc ctaaggagtt aagttctttc aatcaatagc aacaccctta 360
 aagaangttg gttccaattc cttccaaata aaanccttga aacaantccg gatnctaata 420
 ccaantccca naggctcatc aaattagtcc ctaan 455

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 <212> PRT
 <213> Oryza sativa

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 Val Asn Ala Cys Leu Gln Glu Tyr Leu Leu Ala Tyr Leu Asn Lys Leu
 20 25 30
 Gly Lys Lys Ala Arg Gln Tyr Asp Ala Phe Asp Ile Gly Phe Ile Thr
 35 40 45
 Thr Asp Asp Phe Thr Asn Ala Asp Ile Leu Glu Ala Thr Tyr Pro Ala
 50 55 60
 Val Ala Lys Arg Leu Gln Gly Asp Trp Ile Asp Asp Pro Ala Ile Pro
 65 70 75 80
 Ile Val Thr Gly Phe Leu Gly Lys Gly Trp Lys Ser Cys Ala Val Thr
 85 90 95
 Thr Leu Gly Arg Gly Gly Ser Asp Leu Thr Ala Thr Thr Ile Gly Lys
 100 105 110
 Ala Leu

<210> 11
 <211> 847
 <212> DNA
 <213> Oryza sativa

<400> 11
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 ttgtcctcaa caaggacgac gcggcgctcg tggccgcccgc cgccgcctcc tccgcgacgg 180
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<210> 12
<211> 281
<212> PRT
<213> Oryza sativa
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Pro Pro Arg Val Gly Arg Glu Gln Gln Tyr Leu Ala Cys Ala Ala Ala
1 5 10 15

Ala Arg Pro Gly Gly Arg Cys Ser Arg Arg Arg Gly Leu Val Val Arg
20 25 30

Cys Gln Ser Gly Ala Ala Ala Val Val Leu Asn Lys Asp Asp Ala Ala
35 40 45

Ser Val Ala Ala Ala Ala Ala Ser Ser Ala Thr Gly Phe Thr Val Ala
50 55 60

Met Lys Phe Gly Gly Ser Ser Val Ala Ser Ala Glu Arg Met Arg Glu
65 70 75 80

Val Ala Asp Leu Ile Leu Ser Phe Pro Glu Glu Thr Pro Val Val Val
85 90 95

Leu Ser Ala Met Gly Lys Thr Thr Asn Asn Leu Leu Leu Ala Gly Glu
100 105 110

Lys Ala Val Ser Cys Gly Ala Pro Lys Ala Ser Glu Ile Pro Glu Leu
115 120 125

Ala Val Ile Lys Glu Leu His Val Arg Thr Ile Asp Glu Leu Gly Leu
130 135 140

Asp Arg Ser Ile Val Ser Gly Leu Leu Glu Glu Leu Glu Gln Leu Leu
145 150 155 160

Lys Gly Val Ala Met Met Lys Glu Leu Thr Pro Arg Thr Arg Asp Tyr
165 170 175

Leu Val Ser Phe Gly Glu Cys Met Ser Thr Arg Ile Phe Ala Ala Tyr
180 185 190

Leu Asn Lys Leu Gly Lys Lys Ala Arg Gln Tyr Asp Ala Phe Asp Ile
195 200 205

Gly Phe Ile Thr Thr Asp Asp Phe Thr Asn Ala Asp Ile Leu Glu Ala
210 215 220

Thr Tyr Pro Ala Val Ala Lys Arg Leu Gln Gly Asp Trp Ile Asp Asp
 225 230 235 240

Pro Ala Ile Pro Ile Val Thr Gly Phe Leu Gly Lys Gly Trp Lys Ser
 245 250 255

Cys Ala Val Thr Thr Leu Gly Arg Gly Gly Ser Asp Leu Thr Ala Thr
 260 265 270

Thr Ile Gly Lys Ala Leu Arg Thr Arg
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<210> 13
 <211> 646
 <212> DNA
 <213> Triticum aestivum

<220>
 <221> unsure
 <222> (289)

<220>
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 <222> (329)

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 <222> (582) .. (583)

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 <222> (640)

<400> 13

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ggacgagttg gagcaactgc tcaaggggtg tgctatgatg aaagagctga ctcttaggac 180
acgagattac cttgtttcct ttggtgaatg catgtctaca agaataattt ctgcatattt 240
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gaacttggtc ggcanaactt aggaaggggc ggaatgactt gacggcacia ccatgggaaa 480
cctgggggta agaaaatcag gttggaagat gtaacgggtt tgactgtgat caatattatc 540
aaaccggaca ntaccactta ctttgtaggg accgaacttc tnntttggaa agtttgacca 600
tcatcacacc aggagngacc cattcntaaa cnaaacntcn cccgga 646
  
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<210> 14
 <211> 146
 <212> PRT
 <213> Triticum aestivum

<220>
 <221> UNSURE
 <222> (110)

<220>
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 <222> (131)

<220>
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 <222> (145)

<400> 14

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Val Ile Lys Glu Leu His Leu Arg Thr Ile Asp Glu Leu Gly Leu Asp
          20           25           30
Ser Ser Ile Val Ser Gly Phe Leu Asp Glu Leu Glu Gln Leu Leu Lys
          35           40           45
Gly Val Ala Met Met Lys Glu Leu Thr Leu Arg Thr Arg Asp Tyr Leu
 50           55           60
Val Ser Phe Gly Glu Cys Met Ser Thr Arg Ile Phe Ser Ala Tyr Leu
 65           70           75           80
Asn Lys Leu Gly Lys Lys Ala Arg Gln Tyr Asp Ala Phe Asp Leu Gly
          85           90           95
Phe Ile Thr Thr Gly Arg Phe Pro Gln Met Pro Ile Ser Xaa Asn Asn
          100          105          110
Leu Ser Cys Cys Cys Lys Glu Leu His Gly Asn Trp Leu Met Thr Leu
          115          120          125
  
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Leu Ser Xaa Tyr Asp Gly Ser Leu Gly Lys Gly Trp Asn Leu Cys Gly
 130 135 140

Xaa Thr
 145

<210> 15
 <211> 1658
 <212> DNA
 <213> Triticum aestivum

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 20 25 30
 Leu Gly Leu Asp Ser Ser Ile Val Ser Gly Phe Leu Asp Glu Leu Glu
 35 40 45
 Gln Leu Leu Lys Gly Val Ala Met Met Lys Glu Leu Thr Leu Arg Thr
 50 55 60

Thr 210	Arg	Ile	Phe	Ala	Ala	Tyr 215	Leu	Asn	Lys	Ile	Gly 220	Val	Lys	Ala	Arg
Gln 225	Tyr	Asp	Ala	Phe	Glu 230	Ile	Gly	Phe	Ile	Thr 235	Thr	Asp	Asp	Phe	Thr 240
Asn	Ala	Asp	Ile	Leu 245	Glu	Ala	Thr	Tyr	Pro 250	Ala	Val	Ala	Lys	Arg 255	Leu
His	Gly	Asp	Trp 260	Leu	Ser	Asp	Pro	Ala 265	Ile	Ala	Ile	Val	Thr 270	Gly	Phe
Leu	Gly	Lys 275	Ala	Arg	Lys	Ser	Cys 280	Ala	Val	Thr	Thr	Leu 285	Gly	Arg	Gly
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Glu 305	Ile	Gln	Val	Trp	Lys 310	Asp	Val	Asp	Gly	Val 315	Leu	Thr	Cys	Asp	Pro 320
Asn	Ile	Tyr	Pro	Lys 325	Ala	Glu	Pro	Val	Pro 330	Tyr	Leu	Thr	Phe	Asp 335	Glu
Ala	Ala	Glu	Leu	Ala 340	Tyr	Phe	Gly	Ala 345	Gln	Val	Leu	His	Pro 350	Gln	Ser
Met	Arg	Pro 355	Ala	Arg	Glu	Ser	Asp 360	Ile	Pro	Val	Arg	Val 365	Lys	Asn	Ser
Tyr 370	Asn	Pro	Lys	Ala	Pro	Gly 375	Thr	Leu	Ile	Thr	Lys 380	Ala	Arg	Asp	Met
Ser 385	Lys	Ala	Val	Leu	Thr 390	Ser	Ile	Val	Leu	Lys 395	Arg	Asn	Val	Thr	Met 400
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Lys	Val	Phe 420	Ser	Ile	Phe	Glu	Glu 425	Leu	Gly	Ile	Ser	Val 430	Asp	Val	Val
Ala	Thr	Ser 435	Glu	Val	Ser	Val	Ser 440	Leu	Thr	Leu	Asp 445	Pro	Ser	Lys	Leu
Trp 450	Ser	Arg	Glu	Leu	Ile	Gln 455	Gln	Ala	Ser	Glu	Leu 460	Asp	His	Val	Val
Glu 465	Glu	Leu	Glu	Lys	Ile 470	Ala	Val	Val	Asn	Leu 475	Leu	Gln	Asn	Arg	Ser 480
Ile	Ile	Ser	Leu	Ile 485	Gly	Asn	Val	Gln	Arg 490	Ser	Ser	Leu	Ile	Leu 495	Glu
Arg	Leu	Ser 500	Arg	Val	Leu	Arg	Thr 505	Leu	Gly	Val	Thr	Val 510	Gln	Met	Ile
Ser	Gln	Gly 515	Ala	Ser	Lys	Val	Asn 520	Ile	Ser	Leu	Val	Val 525	Asn	Asp	Ser

Glu Ala Glu Gln Cys Val Arg Ala Leu His Ser Ala Phe Phe Glu Ser
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 545 550 555 560

Asp Glu Leu Ser

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<212> DNA

<213> Artificial Sequence

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23

<210> 21

<211> 19

<212> DNA

<213> Artificial Sequence

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